



**jREMO** T.M.  
JEICO PRODUCTS  
**REMOHAND F25-60K**  
**MANUAL**

**Rev. 1**

**JEICO**<sup>®</sup>.COM

# WARRANTY

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**REMOHAND®** Remote Controllers must be handled, installed, operated, and maintained by (an) authorized and (a) qualified person(s), and

Upon the above condition guaranty period from the date of (delivery, installation, inspection) shall be one calendar year

Subject to confirming defects not caused by improper installation, improper operation and/or insufficient maintenance, unauthorized modification, ignorance of environmental specifications, or improper interfacing, irresistible forces such as war(s), strike(s), Act(s) of God, and so on; all such the defects shall be treated as in no warranty.

<b>REMOHAND®</b> INDUSTRIAL REMOTE CONTROLLER		
MODEL	<b>REMOHAND F25 - 60K</b>	<b>REMOHAND F25 - 60K</b>
SERIAL NO.		
CHANNEL		
LOT. NO.		

## PRECAUTIONS

### A. ANNOUNCEMENT

- ◎ This O&M Manual is for **REMOHAND® F25-60K** and the specification referred to Chapter 1.
- ◎ Before installation and operation look through this manual and make sure having a full acknowledgement of this manual.
- ◎ **REMOHAND® F25-60K** remote controllers compose a High-Tech systemized, and a full knowledge of this manual is a must in advance of installation as well as operation of this remote controllers.
- ◎ Do not try to dismantle or unscrew **REMOHAND® F25-60K** except a skilful, an expert, and an authorized.
- ◎ This manual is for reference and good for installation and for maintenance. For more details consult an adjacent agent and/or supplier.
- ◎ Each and all the **REMOHAND® F25-60K** remote controller is tested under severe condition and passed without any default found at factory and is ready for an immediate use for a normal/insufficient condition or so, however, in an emergency and/or in an any dangerous possibility, do not use.
- ◎ After use switch off the main power of the equipment(ex. crane) and confirm the receiver power off, and then turn off the rotary key of the transmitter before pull out the key, and store the key in an isolated area.
- ◎ When not in use stay the transmitter in a safety area and do not allow an unauthorized to attempt to use it.
- ◎ Equipment(ex. crane) using this remote controller must have main relays, limit switches, separate COM lines, and other appropriate devices for safety operation.
- ◎ When metal container for receiver casing is used make sure Ground(GND) to be sure connected to metal part of equipment(ex. crane).
- ◎ Do not use in a severe interfered area and/or lightening or so.
- ◎ Make sure power sources are correct.
- ◎ Power off and do not use during installation and/or maintenance so as to avoid any electric shock or so.
- ◎ Do not try to copy, modify, or release this remote controllers without

permission in advance by Remohand, such an action is illegal. **REMOHAND® F25-60K** remote controller have many international patents, certificates, and so on.

©Without notice in advance and within **JEICO®**'s discretion this manual may be revised, added, and/or deleted for better use.

## B. GENERAL CAUTIONS

- ☆ Operator must be healthy both physically and mentally.
- ☆ Even though this remote controller is versatile, durable, and good for outdoor use try to avoid an excessive shock, pressure, wind, snow, rain, ices, or sunlight, high temperature, humid, gas, and etc.
- ☆ During operation when found power is weak replace all the batteries with all new 4 AA batteries.
- ☆ When rechargeable batteries (however, it is not recommended because of shorter life) are used, use of AA 1.2V Ni-MH 2,500 mAH or above.
- ☆ When not in use take out batteries from the transmitter and put aside in a different area.
- ☆ In an emergency follow up the below emergency measures.

## C. EMERGENCY MEASURES

**REMOHAND® F25-60K** has designed for safety, meeting with various kind of emergencies and for self-recovering. Billions of different I.D. code, Self-Diagnoses, super qualified and isolated protection against voltage surges and/or interferes, etc. are the basic integral functions for solving any unexpected accident or trouble in an emergency. So when such an emergent function is detected, it will off the work immediately and stop all the function automatically.

For emergency follow up the below procedure in advance and then call an adjacent Remohand agent and/or supplier for an emergency service.

1. Press EMS(Emergency Stop) Button. (red mushroom head)
2. Off the rotary key and pull out the key. (green key)
3. Power off receiver power. Power off main power of Equipment.
4. Inquire adjacent **JEICO®** agent and or supplier.

## CHAPTER I : GENERAL SPECIFICATIONS

### 1.1. COMMON SPECIFICATION

- Frequency Ranges & Channel Numbers
  - Standard : 447 Bands : 447.600~447.9875 Mhz, 32 channels
  - Option : 433 Bands : 433.050~434.7750 Mhz, 70 channels
- I.D. Code :  $2^{32}$  (Over 4 Billion)
- Temperature : -20 °C ~ +60 °C
- Remote Distance : 30 ~ 150 M.
- Case Construction : Glass-Fiber
- Protection Grade : IP65

### 1.2 Transmitter

- Power : 4 x 1.5 V Alkaline Battires ( LR6 AA Size)
- Type: Joystick Mechanical Switch
- Size : 214 x 109 x 123 mm (L x W x H)
- Wgt : Approx. 960 grams (Batteries Incl.)

### 1.3 Receiver (Rx)

- Power Source : AC48/110/220V,  
AC110/220/380V, AC48/220/380V  
DC 14~40V, DC 14~60V( ±10%)
- Realy : 10A/250VAC
- Size : 290 x 230 x 70 mm
- Weight : Approx. 3000 grams (Cable Excl.)
- Type : MAIN Lamp Display

### 1.4 Model Identification

(For specific functional application it is distinguished by using of suffix of Serial Number, and normally there is no suffix for standard mode.)

- Model Name : **Remohand F25-60K**
- Standard : Serial No. + No suffix
- Proportional : Serial No. + P
- Magnet : Serial No. + M (Normally No suffix added otherwise special functions required such as an additional interface panel or so)

Note : Serial No. is 8 digits starting with 36, S/N 36xxxxxxx.  
ex. for Magnet Crane Appl. : S/N 36xxxxxxxM

## CHAPTER 3 **REMOHAND®** F25-60K Standard Set

Remohand F25-60K Standard Set comprises one transmitter and one receiver as following as a set

### 3-1 Standard Set



1 Transmitter



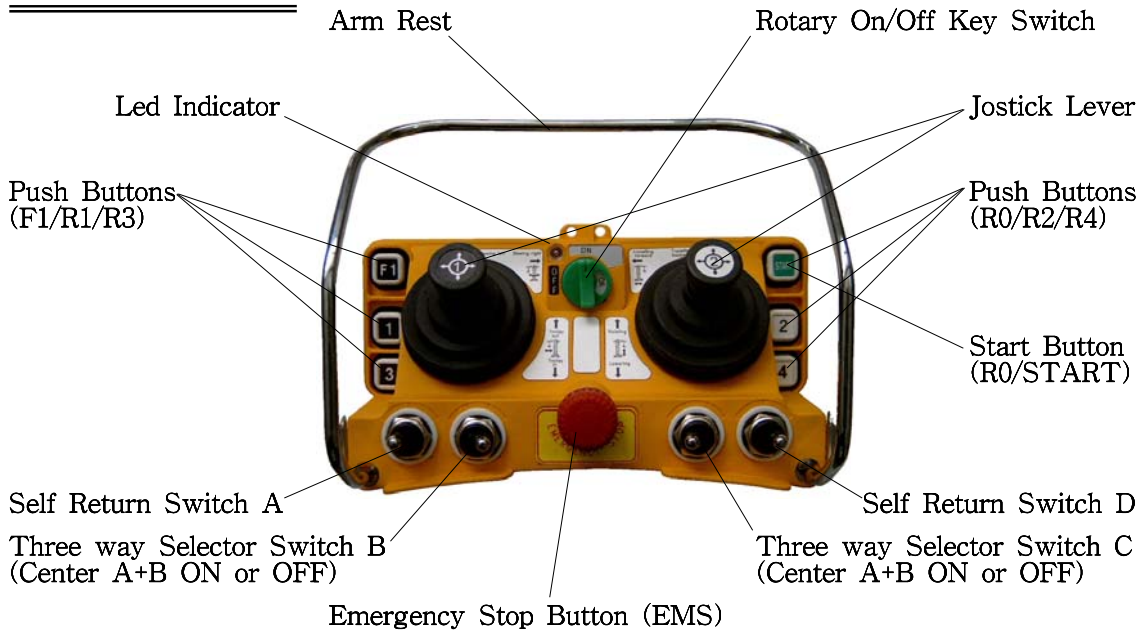
1 Receiver

### 3-2 SIZES AND WEIGHTS

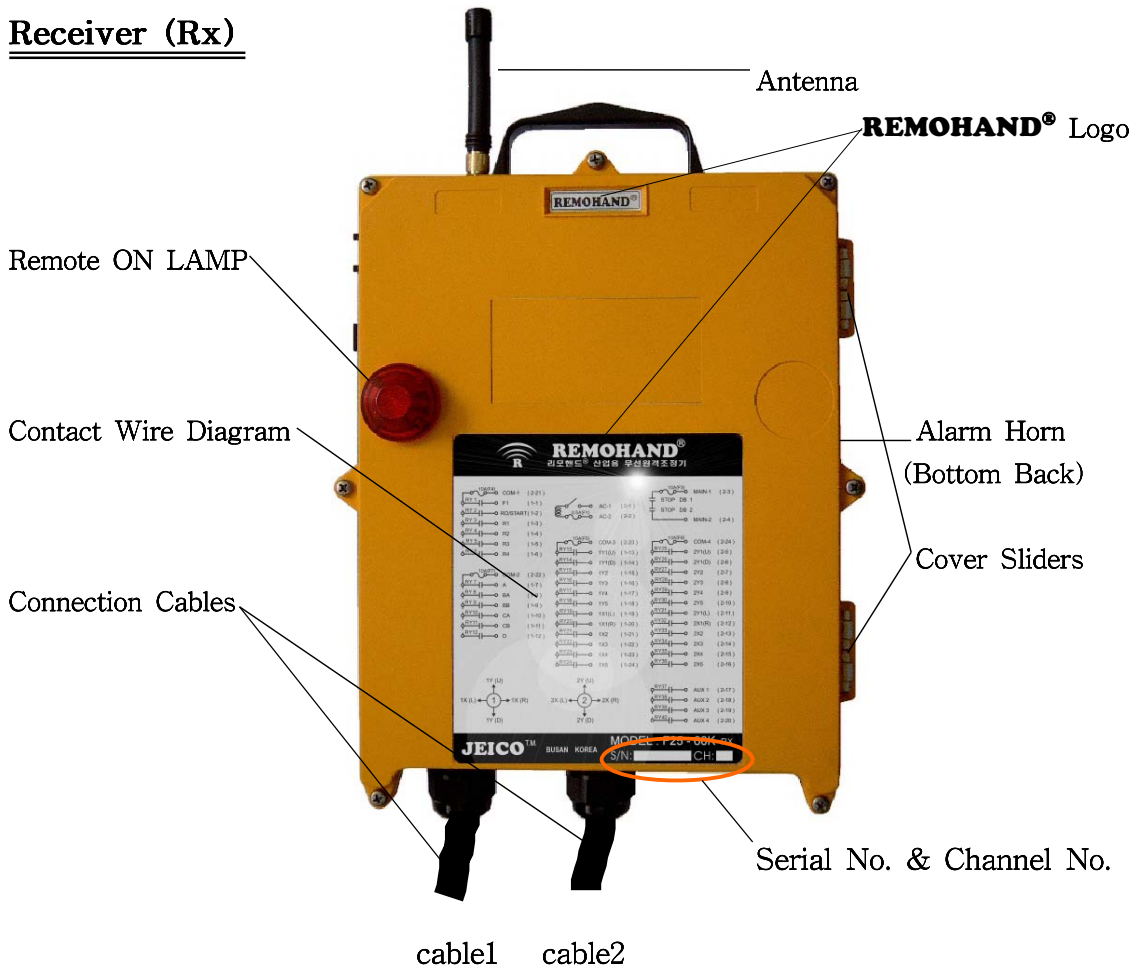
	TRANSMITTER (Rx)	RECEIVER (Rx)
Weight (*)	About 960 gr.	About 3000 gr.
L x W x H, mm	214 x 109 x 123 mm	290 x 230 x 70 mm
Protection, Temp.	IP 65, -20 ~ +60 °C	
Casing	Glass-Fiber	

Note : Weight(\*) indicates batteries incl. to Tx and cables not incl. to Rx.

**3-3 Outward View of REMOHAND® F25-60K Transmitter (Tx)**



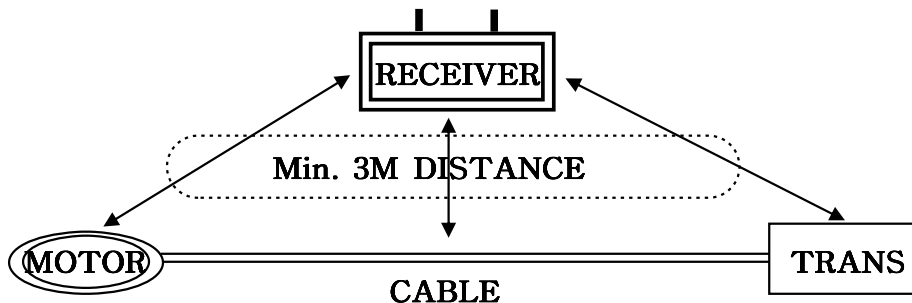
**Receiver (Rx)**



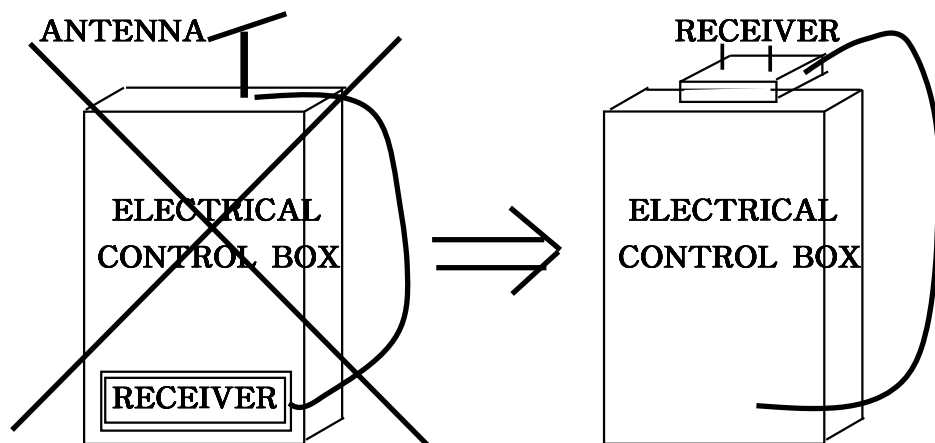
## CHAPTER 5 : INSTALLATION & FUNCTION SETTING

### 5-1 CAUTIONS FOR INSTALLATION

1. Follow up all the safety rule of equipment (ex. crane)
2. Switch off the main power of equipment (ex. crane) in a first action.
3. Install receiver where there will have any other obstructions.
4. Fix receiver firmly.
5. Use an optional external antenna in case receiver installs inside the metal closed box or electrical panel.
6. Check safety devices of equipment(ex. crane) before installation and confirm it is under utmost safety condition.
7. Do not try to install without gaining in skill for electrical circuit diagrams and operation circuits of equipment(ex. crane), remote controller's functions, etc for avoiding an unexpected accident, wrong functions, etc.
8. For avoiding any possible interferences install receiver far from motor and transducer as following illustration :



9. Install receiver top outside of electrical control box and installation in inside the control box is not a proper method.





## 5-2 HOW TO INSTALL **REMOHAND**<sup>®</sup> F25-60K Transmitter (Tx)

### 5-2-1. BATTERIES

- A. Insert 4 AA batteries at right position with + and -.

An opposite position will cause an excessive heat to cause battery leakage, burning, and so on, any malfunction caused by such the poor batteries' handling will not be of free recovery no matter how long the guarantee period remained.

- B. Precautions

1 : Do not use low power type rechargeable batteries.

Recommend : Use 2500mAH or above.

2 : Use all new & fully charged batteries for replacement.

Any un-fully charged one(s) may cause the same to the above clause 5-2-1 A matters.

- B. Change of Batteries : When led signals with yellow it shows battery low. Replace them all immediately with new ones. When the batteries to be changed change once them all, and not to change one or two or so.

- C. Led Color of Battery Power

There are three Led colors to be displayed by the power of battery.

Green : Good. Battery power is enough.

Yellow : Weak. Will Stop soon. Place all the batteries at once.

Red : Of No Use. Change all the batteries at once.

- D. When not in use turn the rotary switch to the left position OFF for saving battery life as well as off the battery power.

### 5-2-2. FUNCTION SETTING

In case change either transmitter or receiver, or modify functions its mating transmitter and receiver must be identical and set both at the same time for sure identification. Function setting can be done either by the copier or by software. Both are optional setting.

- A. Function set by Copier

1. Unscrew Battery Cap at Tx and Open the top cover at Rx.  
(Please note when the Copier to use both

- Tx and Rx power should be off and shut down.)
2. Connect Copier either to Tx or Rx.
  3. Follow the instruction of Copier Manual that will be provided as an optional order.



- B. Function set by Software
  1. Software can be provided as an optional order and
  2. it needs another connector with the software, consult **JEICO** distributor and/or agent for further support.

## 5-3 HOW TO INSTALL **REMOHAND®** F25-60K Receiver (Rx)

### 5-3-1. PREPARATIONS

- A. Prepare tools.
- B. Select a proper place for installation.
  1. Choose a safe area, a visible area of receiver or antenna.
  2. Avoid a spark area (ex. motors, relays, magnet switches, electric cables are likely generating sparks and interferes)
  3. Avoid high voltage and current area.
  4. Receiver is to be distanced at least 3cm from obstacles.
- C. Match receiver power
  1. Check input power source and make sure to connect to the right position.
  2. In case DC power, make sure receiver is also for DC.

### 5-3-2. INSTALLATION SEQUENCE

- A. Power off equipment(ex. crane).
- B. Use the paper template and put it where the receiver to be placed. The template is provided with the receiver.
- C. According to the template bolt hole position marks drill 6 mm bolt holes where the receiver to be installed and fasten receiver onto the holes.
 

Note : Do not try to unscrew shock absorbing bolt!
- D. Connect each wire end of receiver cables to a mating connector of equipment(ex. crane).
  1. Confirm both circuit diagram of receiver and equipment(ex.

- crane) are in sequence and connected correctly.
2. Confirm ground is o.k.
  3. Check and confirm power source.
- E. Open upper case after unscrewing and match a right power source by referring to the above C of 5-3-1 PREPARATIONS.
- F. Switch on receiver power by setting to remote at the selector switch (manual/remote) if selector s/w is installed. If selector switch is not used and connected the power line to the main directly, then the receiver power is automatically on upon connected.
- G. Power on transmitter :
1. Turn on the rotary s/w after released the EMS button.
  2. Press Start Pushbutton of the transmitter and
  3. Confirm if the receiver MAIN Lamp is on.
- G. Press each function button of transmitter and confirm remote operation in a good working condition by confirming led lights inside the relay board of receiver.
- I. Close upper case of receiver and set the selector switch to remote position.

### 5-3-3 Fuses

- A. Column Type Fuse cases are placed and each fuse inside the column is each to replace.
- B. By using of a driver or two fingers press the fuse head cap and rotate it with anticlockwise to open the cap, and the inside fuse will automatically spring up with the cap. Check the fuse and replace it when necessary.
- C. When to close rotate the cap opposite direction.

Fuse Cap



## 5-4 HOW TO MAKE TWIN, COPY AND/OR SYNCHRONIZE

There are three methods to synchronize both transmitter(Tx) and receiver(Rx) by computer, by copier and by remote procedure. Synchronization of Tx-Rx is very usefull especially in case when Tx is broken/disappeared/found fault etc and when it is necessary to replace/add/change or so with the same.

### 5-4-1 BY COMPUTER

- A. It is useful for change of functions such as non-interlocking, toggling, inching, center off, and so on by using of PC software together with PC Gender for connection PC and Tx and/or Rx.
- B. Both PC Software and PC Gender are of an optional provision and normally not to be distributed for keeping safety and sure functioning operation. More details consult adjacent **JEICO's** agent or distributor.

### 5-4-2 BY SELF (REMOTE)

- A. Without any additional apparatus or after services from other parties it can be done by itself where the **REMOHAND F25-60K** is installed and running. Self synchronizing is especially useful for change of Tx, and it is an optional mode function.
- B. To remotely synchronize, it is
  - 1. Tx and Rx are of same functioned. Standard is good for standard, Proportional is good for proportional, and so on,
  - 2. There should be of the same Channel Number, and
  - 3. I.D. code and functions will be synchronized.
- C. For remote synchronizing use an additional manual which is not included and the standard mode is disable function. For enable mode consult adjacent agent or distributor of **JEICO**.

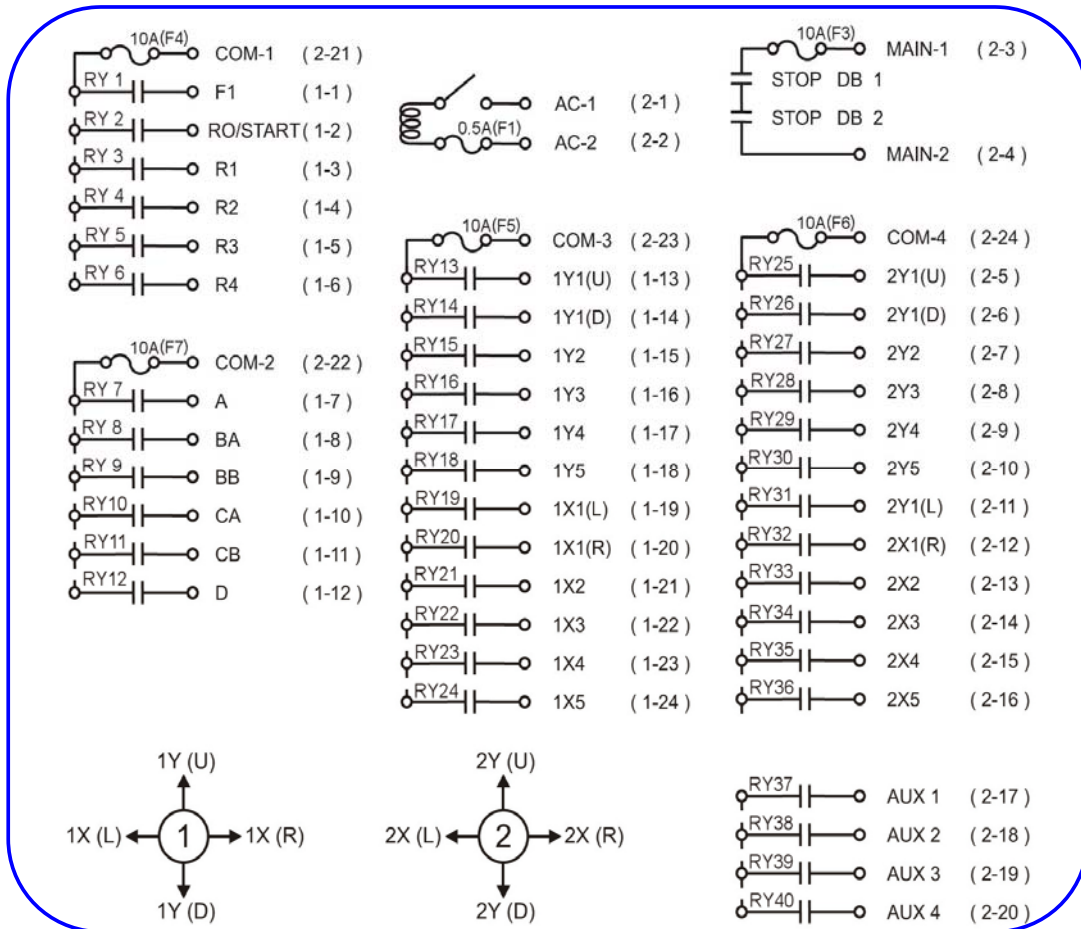
### 5-4-3 BY COPIER

- A. An optional Copier is very good especially for changing Tx as well as synchronizing Tx and Rx when necessary, it is very easy to handle. It is good for having an a/s tool kit.
- B. More details consult adjacent **JEICO's** agent or distributor.

## 5-5 CONTROL CONTACTS WIRE DIAGRAMS

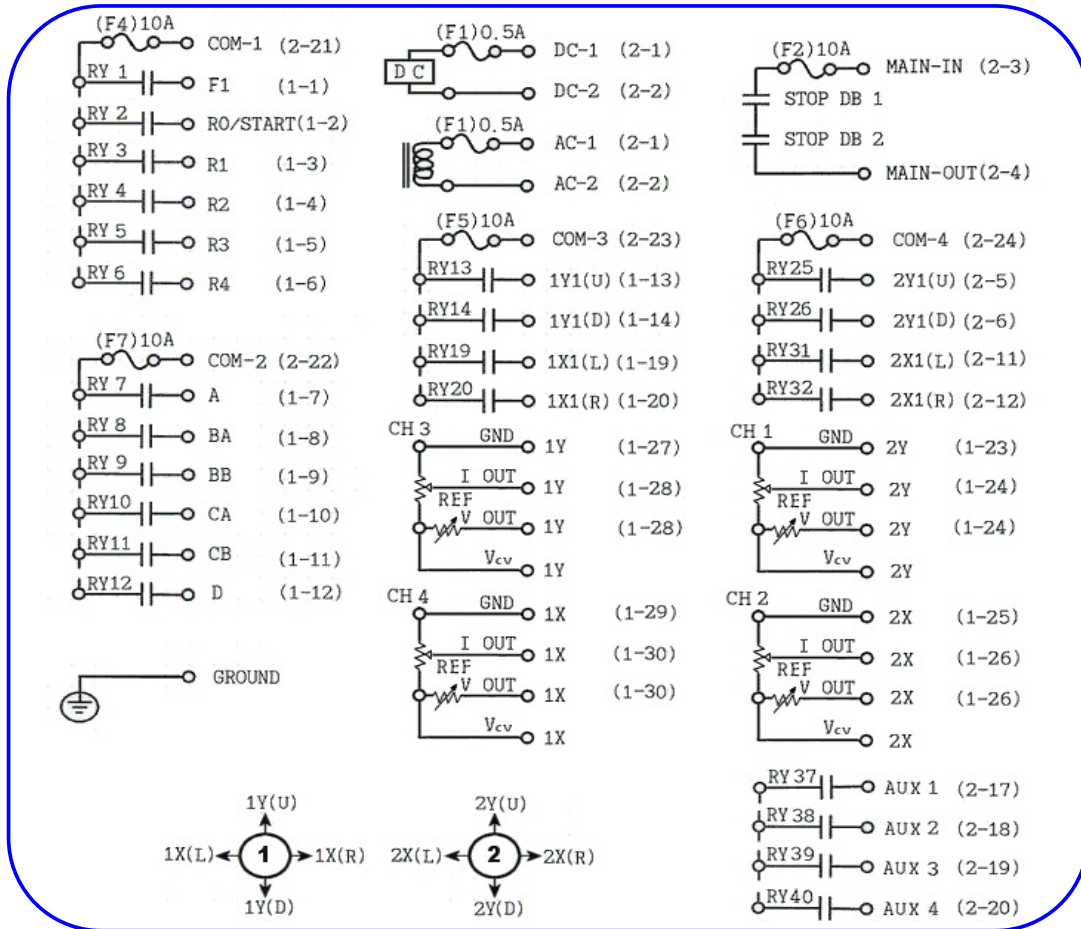
The control contact wire diagram is put on the top of the Receiver cover and there are two different diagrams according to functional applications, one is for the standard & magnet and the other is for the proportional.

### 5-5-1 STANDARD AND MAGNET WIRE DIAGRAM



- Note :**
- Each number in ( ) indicates wire identification number in each Plug, for instance, (1-17) means wire no. 17 of Plug 1.
  - Each Plug is lettered just above the mating cable gland like Plug 1, Plug 2, and the wire no is printed in each wire.
  - All relays are of Normal Open (N.O.) "A" Contacts and connected to N.O. terminals. When Normal Close(N.C.) "B" Contact connection is necessary change the connection jumper N.O. to N.C. position and use N.C. relay which is an optional provision.
  - AUX 1 to 4 (2-17 to 2-20) are extra relays and contacts provided. When necessary use them.

## 5-5-2 OPTIONAL PROPORTIONAL(THYRISTOR) WIRE DIAGRAM



- Note :**
1. Each number in ( ) indicates wire identification number in each Plug, for instance, (1-17) means wire no. 17 of Plug 1.
  2. Each Plug is lettered just above the mating cable gland like Plug 1, Plug 2, and the wire no is printed in each wire.
  3. All relays are of Normal Open (N.O.) "A" Contacts and connected to N.O. terminals. When Normal Close(N.C.) "B" Contact connection is necessary change the connection jumper N.O. to N.C. position and use N.C. relay which is an optional provision.
  4. AUX 1 to 4 (2-17 to 2-20) are extra relays and contacts provided. When necessary use them.
  5. Proportional Control Terminal

Vcv : Forced Neutral (Zero Volt) Output. Option.  
V OUT : Volts Proportional Output, Min -10V ~ Max. +10V  
GND : Ground, 0 V.  
I OUT : Amperes Proportional Output, 4~20 mA. Option.

## CHAPTER 6 : TROUBLESHOOTING

### 6-1 SELF DIAGNOSIS (LED SIGNAL ERROR MESSAGE)

**JEICO** remote controllers have a renewed method of self diagnostic troubleshooting against so much complicated and riddled electronic structures, and yet it is easy to check and find causes and measures for any malfunctions may occur. **JEICO** takes a type of Led signaling error message for better, quick restoration in normal even at site.

### 6-2 LED Diagnosis

NOTE : Please check when Green Key(Off-On Rotary Key) must be On position.

	Causes	LED Signals	Measures
Transmitter	EMS Button not up	Red Flash 0.2sec. Int.	Pull up EMS Button
	Push Button defect	Red Flash 0.2sec. Int.	Replace with new button(s)
	Encoder Module defect	Red Flash 0.5sec. Int.	Replace with a new module
	Wrong batteries used	Red Flash 0.2sec. Int.	Replace with right batteries
	Batteries discharged	Red Flash On & Off	Replace with new batteries
Receiver	PC Board defect	Main Led 0.5sec. Int.	Replace with a new board

### 6-3 Troubleshooting

Appearances	Causes	Measures
Transmitter Led No Signal	1. Battery wrong placed 2. Battery discharged 3. Green Key not On	1. Place right pole direction 2. Replace with new batteries 3. Rotate Green Key to ON
Receiver No Response 1	Frequency interferes,	Off the power and on again after 20 seconds for emissioning
Receiver No Response 2	Rotary key off	Key on by turning right
Receiver No Response 3	Powe IN Fuse fired	Replace Fuse with new one

## APPENDIX I : STANDARD 447 BAND TABLE

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TOTAL NUMBERS : 32    SPACING : 12.5Kc

CH. NO.	MHz
001	447.6000
002	447.6125
003	447.6250
004	447.6375
005	447.6500
006	447.6625
007	447.6750
008	447.6875
009	447.7000
010	447.7125
011	447.7250
012	447.7375
013	447.7500
014	447.7625
015	447.7750
016	447.7875
017	447.8000
018	447.8125
019	447.8250
020	447.8375
021	447.8500
022	447.8625
023	447.8750
024	447.8875
025	447.9000
026	447.9125
027	447.9250
028	447.9375
029	447.9500
030	447.9625
031	447.9750
032	447.9875

Calculation : Mhz = 447.6000 + (N-1) x 0.0125



## APPENDIX II : OPTIONAL 433 BAND TABLE

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TOTAL NUMBERS : 70 CHANNELS

Channel Spacing : 25 Kc

CH. NO.	MHz	CH. NO.	MHz
001	433.050	036	433.925
002	433.075	037	433.950
003	433.100	038	433.975
004	433.125	039	434.000
005	433.150	040	434.025
006	433.175	041	434.050
007	433.200	042	434.075
008	433.225	043	434.100
009	433.250	044	434.125
010	433.275	045	434.150
011	433.300	046	434.175
012	433.325	047	434.200
013	433.350	048	434.225
014	433.375	049	434.250
015	433.400	050	434.275
016	433.425	051	434.300
017	433.450	052	434.325
018	433.475	053	434.350
019	433.500	054	434.375
020	433.525	055	434.400
021	433.550	056	434.425
022	433.575	057	434.450
023	433.600	058	434.475
024	433.625	059	434.500
025	433.650	060	434.525
026	433.675	061	434.550
027	433.700	062	434.575
028	433.725	063	434.600
029	433.750	064	434.625
030	433.775	065	434.650
031	433.800	066	434.675
032	433.825	067	434.700
033	433.850	068	434.725
034	433.875	069	434.750
035	433.900	070	434.775

Calculation :  $Mhz = 433.050 + (N-1) \times 0.025, 01 \leq N \leq 70$

## APPENDIX III : OPTIONAL ACCESSORIES

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**TX WRIST BELT**



**TX RUBBER PROTECTION**



**CHARGER**



**EXT. ANTENNA**



**REMOTE SELECTOR SWITCH**



**PC GENDER & SOFTWARE**

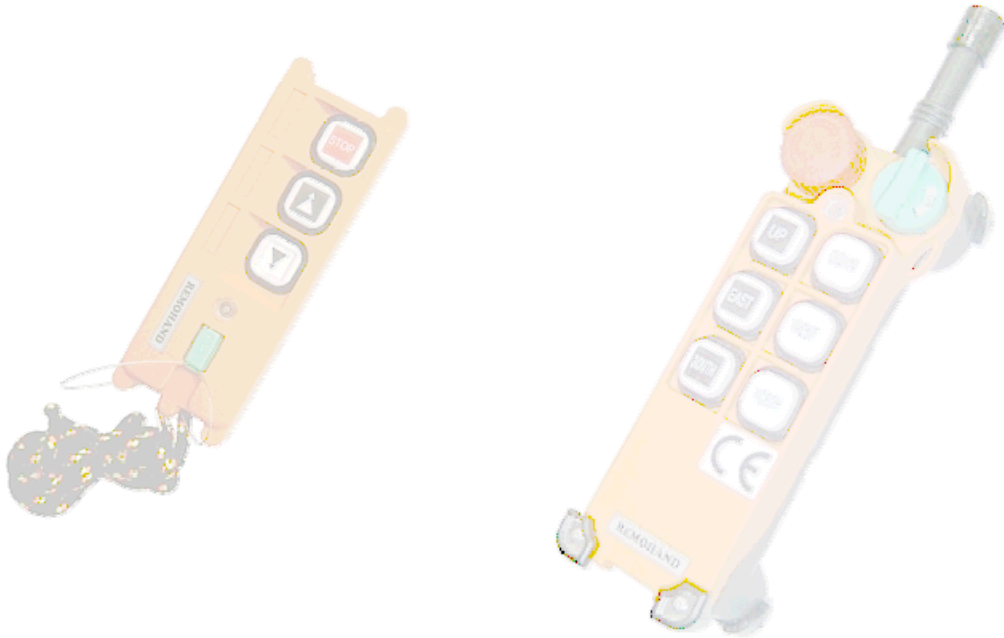


**EMERGENCY RX POWER IN PACK**



**COPIER**

## MEMO





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AGENT

**JEICO®** is the name of the advanced remote controlling system in industries